

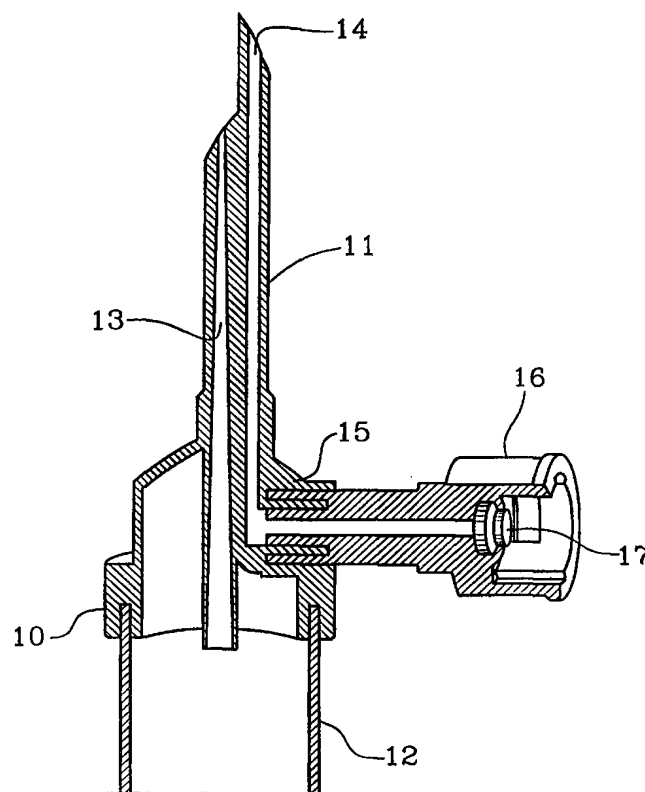


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61M 5/162	A1	(11) International Publication Number: WO 98/19724 (43) International Publication Date: 14 May 1998 (14.05.98)
(21) International Application Number: PCT/SE96/01411 (22) International Filing Date: 4 November 1996 (04.11.96) (71) Applicant (for all designated States except US): CARMEL PHARMA AB [SE/SE]; P.O. Box 5352, S-402 28 Göteborg (SE). (72) Inventor; and (75) Inventor/Applicant (for US only): WESSMAN, Göran [SE/SE]; Skårsgratan 75, S-412 69 Göteborg (SE). (74) Agent: GÖTEBORGS PATENTBYRÅ AB; P.O. Box 5005, S-402 21 Göteborg (SE).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>In English translation (filed in Swedish).</i>

(54) Title: APPARATUS FOR ADMINISTERING TOXIC FLUID**(57) Abstract**

Device for administering a toxic fluid, comprising an infusion device (10) for connection to an infusion bag. The infusion device is provided with an insertion portion (11) for connecting the bag, and an infusion chamber (12) for dosing a fluid flow via a flow duct (13) in the insertion portion from the bag to an outlet arranged on the chamber. The insertion portion also comprises a ventilating duct (14) which extends between the bag and the outside of the infusion device and ends in a connection (16) arranged on the side of the infusion device for supplying fluid to be administered. The connection is provided with at least one membrane (17), which is air tight and penetrable by an injection needle.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakistan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

TITLE

Apparatus for administrating toxic fluid

TECHNICAL AREA

5 The present invention relates to a device for administrating a toxic fluid, comprising an infusion device for connection to an infusion bag, which infusion device is provided with a insertion portion for connecting the bag, and an infusion chamber for dosing a fluid flow via a flow duct in the insertion portion from
10 the bag to an outlet arranged on the chamber, which insertion portion also comprises a ventilating duct which extends between the bag and the outside of the infusion device and ends in a connection arranged on the side of the infusion device for supplying the fluid to be administrated.

15

BACKGROUND OF THE INVENTION

In medical care highly toxic fluids, e.g. cytotoxic drugs or antiviral antibiotics, are dealt with. Each discharge of such fluids entails health hazards for staff and patients. Protective
20 equipment should always be used when handling such fluids, e.g. fume cupboards, protective gloves and garments.

25

A system with penetrable double membranes is disclosed in SE-B-434,700, which system facilitates preparation and administration of a toxic fluid without it coming into contact with breathable air. However, there are still drawbacks when administrating to a patient via infusion, whereby an injector connected to the conical connection of a infusion bag of standard type under certain circumstances could come loose. In such a case are both
30 membranes penetrated, so that discharge to breathable air can take place.

TECHNICAL PROBLEM

The purpose of the present invention is to accomplish an injector connection for supplying drugs to an infusion bag of standard type, which connection eliminates the risk of the drug coming in
5 contact with breathable air.

THE SOLUTION

This is accomplished according to the invention by the connection being provided with at least one membrane, which is air tight and
10 penetrable by an injection needle.

DESCRIPTION OF THE DRAWING

The invention will be described below referring to the embodiment, which is presented in the appended drawing, which
15 schematically presents an infusion device according to the invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

The figure shows an infusion device 10 for connecting an infusion
20 bag, which is not shown. The infusion device comprises an insertion portion 11 for connecting the bag, and an infusion chamber 12 which in a known manner facilitates dosing a fluid flow through the chamber.

25 The insertion portion 11 also comprises on the one hand a flow duct 13, which extends from the bag into the chamber 12, and on the other hand a ventilating duct 14, which makes it possible to obtain a controllable supply of air to the bag so that the infusion fluid can evacuate from the bag in a controlled way. For
30 this purpose the ventilating duct 14 is perpendicular and ends in a luer connection 15, which can be used for mounting an adjustable adjusting device for the supply of air to the bag.

A connection 16 with bayonet socket for an injector, which is not shown, is mounted outside the luer connection 15, e.g. using a cyan acrylate glue. The connection 16 is provided with a membrane 17, which is penetrable by an injection needle and which reseals when the needle is being withdrawn. A suitable material for the membrane is silicone.

When administering via infusion with the infusion device according to the invention, the infusion device is first connected normally to a bag with an infusion fluid. The infusion chamber and the tube is thereafter filled with an infusion fluid. An injector (not shown) with a corresponding bayonet socket, which is loaded with the dog to be administrated, and with an infusion needle connected thereto is mounted in the connection 16. The needle of the injector is now used to penetrate the membrane of the injector from the injector to the bag via the ventilating duct 14. Thereafter the injector needle is withdrawn through both membranes, so that the injector can be demounted. The infusion can now be started after mixing the contents of the bag.

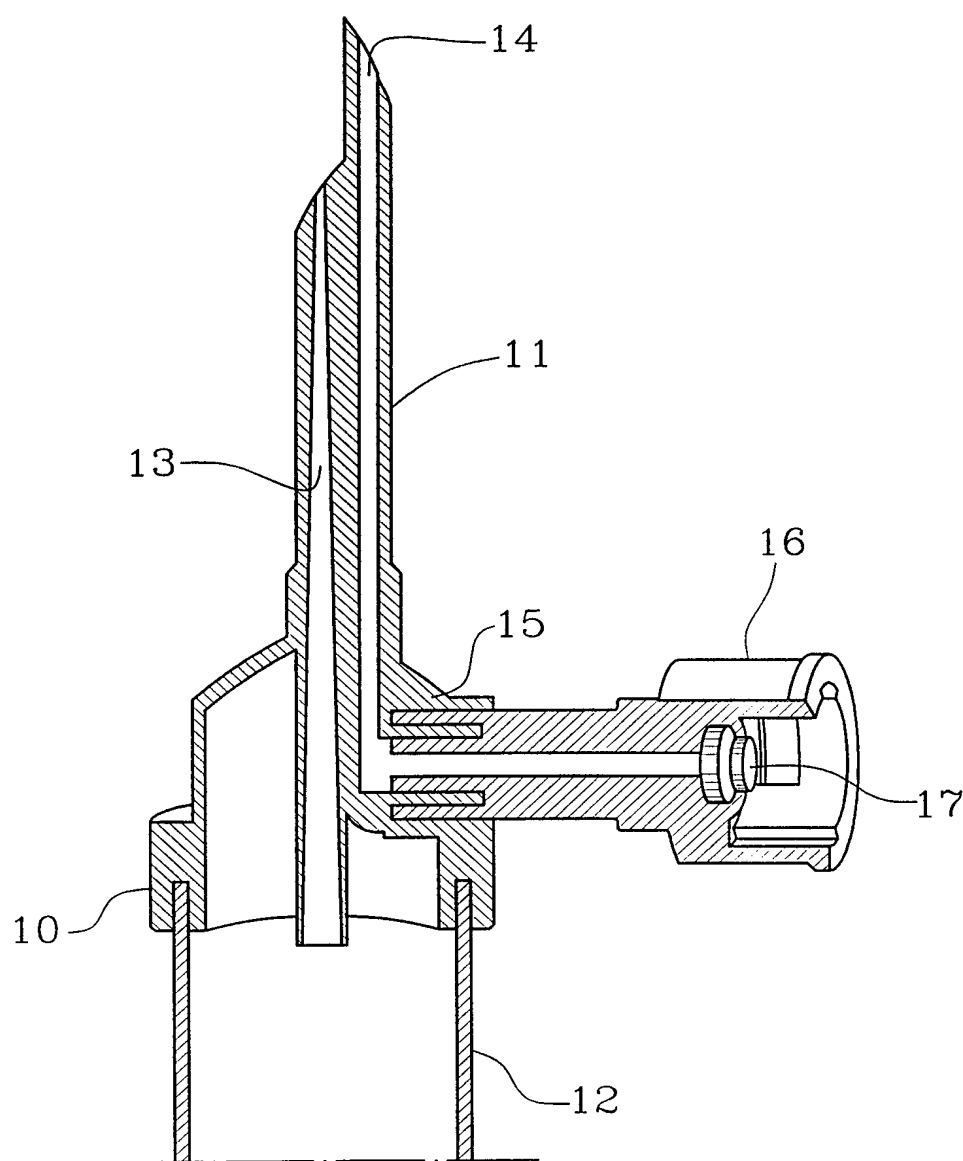
The invention is not limited to the above described embodiment. For instance, the above described connection 16 provided with membrane can be connected to a container of a flexible material, such as a bag, which can be used as an air container, or to receive excess fluid.

CLAIMS

1. Device for administrating a toxic fluid, comprising an infusion device (10) for connection to an infusion bag, which
5 infusion device is provided with an insertion portion (11) for connecting the bag, and an infusion chamber (12) for dosing a fluid flow via a flow duct (13) in the insertion portion from the bag to an outlet arranged on the chamber, which insertion portion also comprises a ventilating duct (14) which extends between the
10 bag and the outside of the infusion device and ends in a connection (16) arranged on the side of the infusion device for supplying fluid to be administrated,
c h a r a c t e r i z e d i n,
that the connection is provided with at least one membrane (17),
15 which is air tight and penetrable by an injection needle.

1/1

FIG. 1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 96/01411

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: A61M 5/162

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: A61M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO: WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 2206908 A1 (JAPAN MEDICAL SUPPLY CO. LTD.), 23 August 1973 (23.08.73), figure 2, claim 1 --- -----	1

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

4 June 1997

Date of mailing of the international search report

25 -06- 1997

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

May Hallne

Telephone No. +46 8 782 25 00

International application No.
PCT/SE 96/01411

Form PCT/ISA/210 (patent family annex) (July 1992)